Chapter 2 - Systems Processing Overview

PURPOSE

The purpose of this chapter is to introduce R*STARS users to the functional accounting capabilities, system profiles, and major processing modules of R*STARS.

Terms

Fatal Errors
Program Cost Account
Single-Transaction Processing
Subsystem Interface

2.1 INTRODUCTION

R*STARS has been designed to satisfy the requirements that are the responsibility of the agencies. This includes basic accounting requirements, such as budgetary and general ledger accounting, and more sophisticated cost accounting requirements, such as program accounting, indirect cost accumulation and allocation, and grant accounting.

This chapter provides a high-level overview of R*STARS. The overview includes a summary of the functional capabilities in the system, a discussion of profiles, and a review of the organization and structure of the major processing modules.

In R*STARS, all of the system functions are integrated into and performed by a set of standardized software. This core system utilizes a single financial database and input transaction to record accounting and profile maintenance activity.

By integrating all of the major functional accounting requirements, the amount of manual intervention required to enter data, generate reports, and perform reconciliations is greatly reduced. Since all of the system database segments are updated as the result of a single transaction, the data entry function is reduced significantly and the process of reconciling the output of more than one system is virtually eliminated. More importantly, R*STARS provides for the integration of all information into a single, comprehensive system for planning, monitoring, and evaluating the performance of vital programs and projects.

2.2 FUNCTIONAL ACCOUNTING CAPABILITIES

R*STARS is an integrated accounting information system designed to provide agencies with a full range of accounting and reporting capabilities. The following paragraphs provide a description of the functional accounting capabilities in the system. These capabilities are illustrated in the figure below.

FUNCTIONAL ACCOUNTING CAPABILITIES
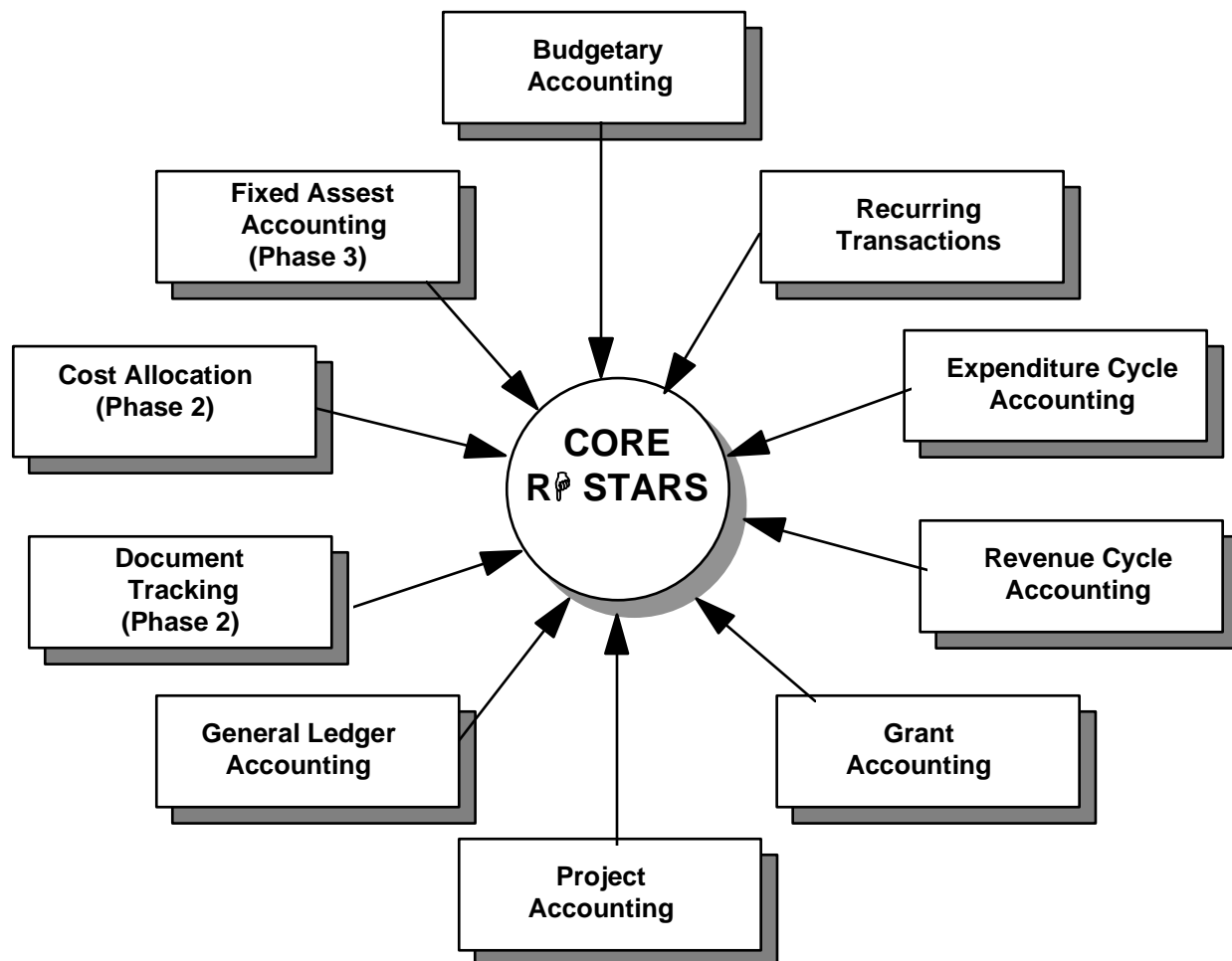
Budgetary Accounting

A fundamental requirement of a governmental financial system is the need to capture and track budgets and to monitor obligations and expenditures against the available budget balance.

Most governments award appropriations on the basis of agency, fund, and some level of program or organization. This high level of appropriation represents the legal spending authority of a government entity. To provide additional budgetary control, the high level appropriation is normally subdivided into agency budgets. These agency budgets may be recorded at a lower level of detail in the agency, program, organization and object structure. R*STARS has the ability to track appropriations and agency budgets at virtually any level of detail in the data classification structure, including agency, program, organization, appropriated fund, and fund.

To provide for the effective reporting of the appropriation and agency budget process, different types of appropriation actions, such as original, supplemental and re-appropriations are maintained separately in the system. Moreover, appropriations and agency budgets can be established prior to the start of the fiscal year so that control amounts are in place when the year begins.

R*STARS also provides the ability to subdivide appropriations and agency budgets into (periodic) allotments on a monthly, quarterly, or annual basis.

Expenditure Cycle Accounting

R*STARS was developed to provide a full range of pre-encumbrance, encumbrance, and expenditure disbursement and control accounting capabilities. Pre-encumbrance and encumbrance data can be recorded in the system on a document by document basis for all levels of the expenditure classification structure. Summary information is maintained that reflects the effect of expenditure transactions against the individual purchase orders and contracts. As warrants and direct deposits are generated, the effect of the disbursement is recorded in the system tables for reporting and reconciliation. Each of the events in the expenditure cycle are described in the following pages of this section.

Pre-Encumbrance and Encumbrance Accounting

Several important features are built into R*STARS to provide pre-encumbrance and encumbrance accounting capabilities. When encumbrances are recorded, R*STARS can automatically liquidate any pre-encumbrances previously recorded. The system automatically calculates the amount of the encumbrance liquidation associated with a specific payment. This feature is important because final payments of encumbered items are frequently different from the original encumbrance amount. When a final payment is either greater or less than the

unliquidated balance of an encumbrance, within determined tolerance limits, the system can automatically generate a liquidation transaction equal to the document's unliquidated balance.

The system controls pre-encumbrance and encumbrance transactions through a series of comprehensive fund control, profile control, and table look up edits. The specific edits to be performed for a transaction are defined in the 28A Transaction Code Decision profile. Transactions failing one or more of the system edits are reported on the DAFR2151 Error Report with appropriate error message(s).

All encumbrance transactions are edited against available appropriation, agency budget, and agency budget allotment balances. Based on specified options, encumbrance transactions which exceed the available budgetary balances will be flagged as either warning or fatal errors or ignored. Over-expending appropriations (and allotments) can be a cause for fatal errors. The type of control enforced on over-expending agency budgets is user-defined. Documents with warning errors are reported as such but still post to the financial tables. Documents with fatal errors are not posted, but instead are held on the Internal Transaction file until corrected or deleted.

If the user is posting transactions in a full on-line edit and update mode, fatal errors will not be posted to the financial tables or to the Internal Transaction file. Instead, the transactions must be corrected on-line.

Additionally, edit capabilities have been included that allow the system to determine if payments fall within specified limits of the amount originally encumbered. The actual tolerance limits for specific types of encumbrances are based on accounting policy and are established in the Document Control profile. These tolerance limits can be established as a percentage of the original document amount (e.g. 120% of the original amount), or an absolute dollar amount (e.g. $50 over the original amount). For example, if the tolerance limit was set at 120% of the original encumbrance, a payment of $1,000 against an encumbrance of $500 will be identified as an error.

R*STARS is also designed to address the common situation where requisitions (e.g. pre-encumbrances) or purchase orders (e.g. encumbrances) are established against one combination of classification data, and encumbrances or payments are recorded against another. For example, agencies may encumber funds against one index and expend these items against a different index. To provide for this situation, capabilities are included in the system which allow the payment to be recorded in accordance with the classification data coded on the disbursement document, while recording the encumbrance liquidation in accordance with the classification data coded on the original encumbrance document. This feature provides control for liquidation transactions, yet allows flexibility, particularly when the final charge of an item is not known at the time a purchase order is recorded.

Expenditure Accounting

Expenditure accounting involves the proper classification of costs among the many categories required for governmental budgeting, accounting and reporting. Expenditures are generally recorded against a combination of agency, fund, object, and organization or program structures. Within each of these structures, costs may be recorded at varying levels of detail. For example, some agencies may classify costs at the agency level, while others may classify costs at lower organization levels. Reports may be generated at each of the various levels within the agency, fund, object, and organization or program structures. Additional reports are available that may include optional classification elements like grant, project, agency codes 1, 2 and 3, and multipurpose code.

Payment Processing

R*STARS provides for automated warrant/check writing, direct deposit and wire transfer capabilities. When payment voucher or vendor invoice data are recorded in the system, all of the data needed to generate a payment and remittance advice are stored in the system's tables. Payments may be scheduled through the use of a "due date." Payments are selected for processing when their due date equals the current effective date plus the Advance Payment Days for direct deposit or warrant/checks. Advance Payment Days are defined in the 97 System Management profile. The system produces a payment register each time payments are produced. The payment processing cycle will automatically update the Accounting Event Table with the warrant number and issue date.

The D55 Payment Processing Control profile allows the user to define how the system will sort payments. It allows the user to also determine how payments will be routed for distribution. There are 20 valid values available for payment sorting and routing. The user can define remittance line printing for the remittance advice. This can be done with the Remit Sort Keys in D55. There are 10 valid values available to the user to define the number of lines printed and the information printed in each line.

The amount of vouchers approved for payment is compared against available cash and appropriation authority prior to the actual generation of payments. The system not only checks the available cash and appropriation balance, but also reserves it to prevent any subsequent transactions (e.g., cash transfers) from utilizing the same cash.

Vendor Tracking

The Expenditure Cycle allows consolidated payment of multiple vouchers to the same payee, provides more consistent reporting of payments made to payees, and supports federal tax reporting for 1099s and backup withholding.

Revenue Cycle Accounting

Organizations obtain revenue from a wide range of sources and must maintain information regarding revenue for effective accounting and control. Every organization has the responsibility for assuring its receipts are properly controlled and its revenue is correctly recorded. To meet this objective, the accounting system must record actual revenue against estimated revenue, if recorded, and classify the revenue at detailed levels. In addition, if recorded and monitored, R*STARS will provide information on accounts receivable and the associated customers.

Accrued revenues and receivables, cash receipts, and inter-agency transfers are all prepared and entered directly by the agency. Actual revenues are compared to budgeted amounts, if the estimated revenues were recorded in R*STARS.

Common cash is not updated for cash received by agencies until Treasury has approved the deposit against a validated deposit slip through the 101 Deposit Validation screen. However, the cash received by agencies will post directly to agency budgets.

Grant and Project Accounting

R*STARS provides the ability to account for grants and projects in a variety of ways, depending upon each agency's needs. The grant and project accounting features of the system include a number of important capabilities.

Information for individual grants and projects can be maintained in a variety of ways. This includes the grant entitlement period, the federal fiscal year, or any unique accounting period which may differ from the system fiscal year. This reporting capability allows the system to maintain inception to date information as well as current year information. The system is also capable of maintaining and reporting budget data applicable to individual grants and projects. For example, it may be desirable to establish budgets for individual tasks or phases of a project and to track actual performance against these targets. R*STARS also provides the ability to record revenues on a grant and project basis and to report these against expenditures, where applicable. The system also provides for the ability to account for and compare reported subgrantee expenditures to actual expenditures of the agency. Finally, R*STARS can automatically generate billings for both grants and projects. Billings can be controlled in R*STARS by establishing a billable budget for grants and projects. For example, the federal government can be automatically billed to reimburse a highway construction project.

A variety of identifying information about each grant and project can be maintained in the system. These data elements include such things as the grantor, grant number, project number, subgrantee number **(not used in Michigan)**, grant type, project type, and grant category.

General Ledger Accounting

The R*STARS general ledger accounting function maintains balances for the real and nominal accounts identified in the various funds' account structures. This capability can assist in managing, controlling and reporting on funds. The following are some primary objectives of governmental entities regarding general ledger accounting functions:

- Maintain a self-balancing general ledger for each fiscal entity to support GAAP reporting requirements.

- Ensure that the subsidiary ledgers are always in agreement with the control totals maintained in the general ledger.

- Properly account for revenue and expenditure transfers between funds.

One of the major purposes of the general ledger accounting function is to maintain control over the detailed records of a fund's activities. One way that this is accomplished is through the simultaneous posting of each accounting transaction to both the general ledger control accounts and the appropriate subsidiary accounts. Additionally, R*STARS establishes a link between each subsidiary account at the control account level and generates system reconciliation and exception reports to indicate when and where an out-of-balance condition exists.

To provide maximum flexibility for management, general ledger accounting is performed at several levels of detail. Take the Fund structure for example. At the highest level, general ledger control information is available for groups of funds, such as Governmental and Proprietary groups. Within the Fund Group is the Fund Type. Examples of Fund Types include General Fund, Special Revenue Funds and Internal Service Funds. Within Fund Types, GAAP Funds provide additional detail as required for the combining statements. The system provides for a self-balancing general ledger at the GAAP fund, GAAP subfund, fund, and grant levels of detail. Similar hierarchical structures are available for the State Fund Structure (e.g. Appropriated Funds).

To permit reporting on the financial status and results of operations of any governmental unit, the accounting system must provide data that is fairly presented and of sufficient disclosure. This includes the proper classification of funds, and maintenance of data on the accrual or modified accrual basis of accounting. Additionally, the system must provide for the proper recognition and treatment of accounting transactions for such things as inter-fund transfers and billings. Also, this system must provide data on the cash basis as required by state law.

When an agency receives a federal grant, or is involved in a federal project, it often has to report on the status of that grant or project in a specialized format. Federal fund reports present agency accountability on the use of federal funds. To comply with certain regulations, an agency may be required to generate financial data in the form of special reports. To handle these needs,

State of Michigan, Version 2.0

R*STARS includes the capability to identify financial data by grant number. To facilitate the federal audit process, detailed transaction reports are available to support the trial balance data.

Cost Allocation (Functionality not released)

A cost allocation methodology may be required for agencies to perform comprehensive cost accounting. The capability to allocate indirect costs supports the need to account for the full costs of specific segments of operations as accurately as possible. Full cost accounting is also required to accurately account for reimbursable expenditures, particularly those reimbursable under federal grants. In addition to these functions, the R*STARS cost allocation capability provides the following capabilities:

- ■ Multiple cost allocation methodologies that allow agencies to distribute different types of indirect costs in different ways.

- ■ Multiple data classification categories to distinguish allocated indirect costs from direct costs.

- ■ Ability to determine the amount of indirect cost recoveries, to account for indirect cost variances, and to periodically allocate such variances.
- ■ Allows agencies to distribute other general ledger activity, such as revenue and encumbrances, based on user-defined distribution basis.

Fixed Asset Accounting (Functionality not released)

The Fixed Asset Subsystem (FAS) provides agencies with financial accounting for fixed asset accounts, and detailed physical identification of these assets.

The Fixed Asset Subsystem provides for the following:

- ■ Passes financial information for asset acquisitions from ADPICS to FAS, and in a few cases, R*STARS to FAS.

- ■ Identifies the class of fixed asset, its funding source, description, location and other physical information.

- ■ Uses the data elements, property number, agency, and amount to match Financial Transactions with Property Record Transactions.

■ Provides the ability to perform mass transfers of assets from one agency, location, stewardship ID/Name, fund, or combinations thereof to another.

■ Provides the ability to change certain data, such as, replacement value, useful life, and depreciation method.

■ Calculates depreciation and posts it to R*STARS financial tables on a periodic or monthly basis.

■ Calculates use allowance on a periodic or monthly basis.

■ Generates transactions which are entered into R*STARS for depreciation, dispositions and recognition of fixed assets in the General Fixed Asset Account Group or proprietary fund's balance sheet.

■ Provides a reporting function which facilitates the scheduling of preventive maintenance activities on user owned assets.

■ Generates reconciliation, audit trail, depreciation and inventory reports as well as error listings.

Document Tracking

The Document Tracking Subsystem provides agencies with the ability to track the status of financial documents by recording the actions associated with documents as they flow through the manual and automated processes of R*STARS. The Document Tracking Subsystem provides the following capabilities:

■ Identification of the location and status of a document.

■ Tracking the status of documents.

■ Multiple methods of updating the document status.

■ A mechanism to require multiple approval actions for specific document types.

■ Ability for authorized users to identify which documents will be tracked.

■ Ability to define each action code to be tracked.

- ■ Automatic assignment of archive reference number when a document is transmitted **(Not used in Michigan)**.

- ■ A transmittal report is generated listing the contents of each transmittal **(Not used in Michigan)**.

Document Tracking actions may be updated on-line or in the batch system.

Recurring Transactions

The Recurring Transaction Subsystem provides the ability to automatically post those transactions which occur periodically (i.e. monthly journal vouchers). This subsystem is agency maintained.

Batch capabilities of the Recurring Transaction Subsystem include the ability to define transactions which are generated on a pre-defined schedule and request proof lists or the actual generation of transactions for a range of dates based on the schedule.

This subsystem also provides the ability to define coding blocks and retrieve such coding blocks on-line on any financial transaction entry screen through the use of a Recurring Transaction Index (RTI). The RTI can be input directly during transaction entry or can be looked up by the PCA, Project or Grant.

2.3 APPLICATION OF SYSTEM PROFILES

To provide maximum flexibility in tailoring the system to meet the unique needs of governmental agencies, the system is designed as a "profile-driven" system. This means the specific accounting structure and information processing logic is controlled through system profiles.

It is through the maintenance of these profiles, and not through modifications to system software, that fiscal personnel control the accounting impact, the edits, and the profile updates associated with each input transaction. This frees the financial manager from dependence upon programming support to carry out changes in accounting structure, and provides substantial flexibility in responding to new and changing system requirements. Some of the system profiles used include:

- Agency Control Profile
- Appropriation Number Profile
- Program Cost Account Profile
- Index Code Profile
- Cost Allocation Profile
- Systemwide Vendor/Mail Code Profile
- Project Control Profile
- Grant Control Profile

Profile maintenance is described in this manual and the profiles mentioned above are described in the following pages.

Agency Control Profile

R*STARS allows each agency or department to function independently. This means that decisions made by the accounting office of one agency regarding areas such as the level of control to be exercised over agency budgets need not affect the levels of control exercised by the accounting office of another agency. This flexibility is built into the system through the Agency Control profile.

The Agency Control profile contains a single record for each agency and fiscal year combination. For each agency, the profile provides the following information:

- Valid agency/fiscal year combinations used to control system functions.

- Document match level indicators that determine the required relationships between encumbrances and pre-encumbrances and their related liquidating transactions.

■ Detail cost allocation processing rules, specific for that agency.

■ Billing Deficit Accounts to accumulate expenditure overruns for billable projects, if used.

■ Default Accounts to be used when required codes are not entered during transaction entry.

■ Indicators that determine the effect of encumbrances and pre-encumbrances on agency budget controls.

■ Indicators that determine whether an agency will capture fixed assets and associated threshold amounts.

■ The last stage closed code which allows agencies to control month end closing.

■ The last month and fiscal year closed.

■ Reporting indicators to determine when to run monthly, quarterly, and annual reports.

This profile is created at the beginning of each fiscal year and should require little maintenance throughout the year.

Appropriation Number Profile

In addition to the accounting classification data, the Appropriation profile contains several information elements. These include the effective dates of the appropriation and edit indicators that determine the type of control to be exercised. This profile is normally created prior to the start of the appropriation year and should require only minor modifications throughout the year.

Program Cost Account Profile

The Program Cost Account (PCA) profile uniquely identifies each detailed program structure established by the accounting office for an agency. The PCA serves four important functions within the system. First, it provides a simple coding reduction technique for referencing program information and other classification data. Second, the PCA contains an indicator which identifies the program level that agency budgets will be tracked in the system. Third, the PCA is used to assist in the monitoring of direct and indirect costs for cost allocation. Finally, the PCA may be used to infer a Recurring Transaction Index (RTI) for transaction split.

Index Code Profile

The expanded classification structure in the system may require several levels of organization classification. These organization classification levels can be tailored to the unique needs of an organization. Rather than requiring personnel to code multiple levels of organization on an input transaction, the data can be stored in the Index Code profile and assigned a five digit Index Code. When coded on an input transaction, the Index Code looks up the expanded organization classification data for editing, posting, and reporting purposes. The Index Code can also look up other classification data, as defined by each organization.

Cost Allocation Profile (Functionality not released)

The cost accounting and reporting requirements of an agency have been fully integrated into the system structure. One method of integration is provided by the Cost Allocation profile. Through this profile, each agency can define how indirect cost pools are to be distributed to direct cost pools by cost allocation type. For each indirect cost pool, this profile defines the sequence (for step-down allocations), the allocation method, the distribution rates and base accounts for recording the allocations. All of these elements are used by the cost allocation subsystem to properly charge indirect costs to direct cost centers.

Vendor Profiles

The system contains a vendor numbering capability which includes the ability to store multiple addresses for each vendor. This information is used in the preparation of warrants, direct deposits and for other reporting purposes. Vendor number information is normally required by the system for recording accounting transactions such as disbursements. These vendors are defined in the 52 Systemwide Vendor profile and 51 Systemwide Vendor Mail Code profile. Vender information is established in ADPICS, which interfaces with R*STARS, resulting in vendor information in the R*STARS profiles 51, 52, 87, 88, 3A, and 3B.

Project Control Profile

The Project Control profile is the focal point for the editing of project-related transactions, and for the preparation of bills for project related expenses. The Project Control profile provides users the ability to define unique project accounting structures for each agency's projects. Information elements contained in the profile provide additional accounting classification data, as well as several indicators which control the processing of project-related data. An optional billing segment identifies the billing cycle, billing method, billing rates and base, and other data used by the billing program. The Project Control profile may also be used to infer a Recurring Transaction Index (RTI) for transaction split.

Grant Control Profile

The Grant Control profile is very similar to the Project Control profile. The Grant Control profile provides substantial flexibility in the methodology used to identify and account for grants. To provide this flexibility, this profile maintains a variety of information regarding each individual grant. Grant type, billing method, posting indicators, control dates, and a number of other classification elements are maintained. The Grant Control profile may also be used to infer a Recurring Transaction Index (RTI) for transaction split.

2.4 MAJOR PROCESSING MODULES

In the past, accounting systems were often comprised of many independent modules, with each module being designed to support a single functional accounting area. Many of these modules were developed as a result of the identification of a specific information requirement and the development of an isolated set of programs to satisfy that need. Systems designed in this manner were generally characterized by limited integration, redundant and inefficient system processing, and limited flexibility. R*STARS has been designed to overcome these deficiencies. Since the accounting logic in R*STARS is defined in the system profiles, there are few system modules that directly support a single functional accounting area. Instead, each module supports the processing requirements of all functional accounting areas. The system is composed of three major processing modules:

- Profile maintenance.

- Input, edit, update (which incorporates financial transaction processing, document tracking, and payment processing).

- Reporting.

Each of these modules is fully integrated and capable of capturing, transmitting, recording and reporting the hundreds or thousands of transactions to be handled daily. Each of these modules is described below, and presented in a figure on page 2.4-2.
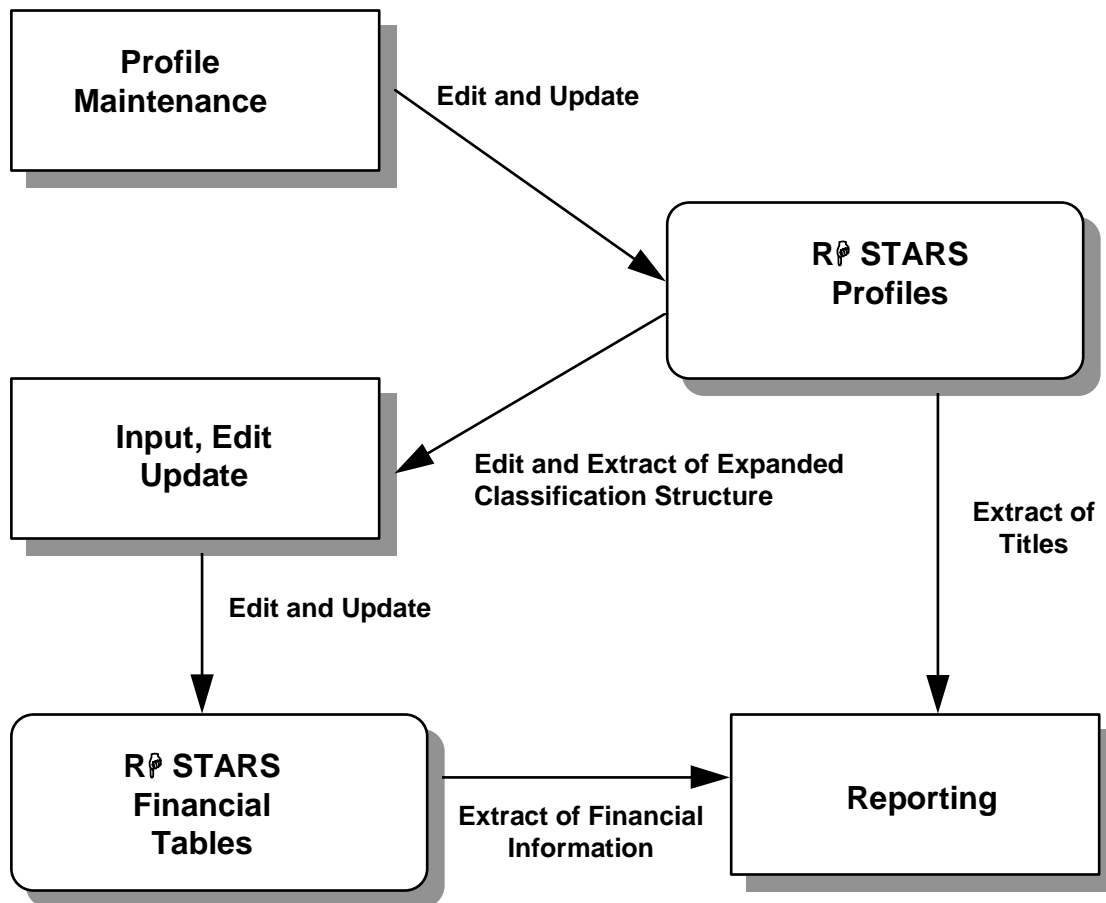
Profile Maintenance

The profile maintenance module performs all maintenance functions for the system profiles. There is a single maintenance program for each of the system profiles. The following maintenance functions are performed by each of these programs using specified function keys:

- Save — create a record or alter the content of a record.
- Delete — remove the record.
- Inquire — retrieves a specific record.
- Next — retrieves the next record.

The ability to perform these functions is carefully controlled by system security, for each profile, to help ensure that only valid profile maintenance activities are performed.

R STARS MAJOR PROCESSING MODULES

| Profile Maintenance | — Edit and Update → | R STARS Profiles |

(Diagram)

- **Profile Maintenance** — *Edit and Update* → **R STARS Profiles**
- **R STARS Profiles** — *Edit and Extract of Expanded Classification Structure* → **Input, Edit Update**
- **Input, Edit Update** — *Edit and Update* → **R STARS Financial Tables**
- **R STARS Financial Tables** — *Extract of Financial Information* → **Reporting**
- **R STARS Profiles** — *Extract of Titles* → **Reporting**

Input, Edit, Update

The input, edit, update process (IEU) is the focal point for all financial data entering the system. The following basic processes are performed:

- Data Input and Classification
- Edit
- Table Update
- Error Correction
- Document Tracking and Payment Processing

An overview of each of these processes is contained in the following paragraphs.

Data Input and Classification

Accounting transactions entered into the system may be received directly from user agencies, from other subsystems, or through the standard interface procedure.

Data Edit

The transactions are edited in accordance with certain edit rules. If the accounting transactions pass the required edit tests, they may then update the financial tables. If they fail any of the required edits, the errors must first be corrected before they can update the tables.

Financial Table Update

Financial Table Update program performs fund and financial table control edits, and then posts the valid transactions to the financial tables. These table updates are performed based on the posting indicators retrieved from the Transaction Code Decision profile. The edits and table updates can be performed in batch or on-line. In batch, when a transaction fails certain types of edits, it is written to the Internal Transaction file with edit mode "3" and not posted to any of the financial tables. Some edits may be established as warnings only, in which case the transactions would be allowed to post to the tables, but are flagged with a warning message.

When processing transactions on-line, transactions that do not pass fatal edits must be corrected on-line before they will post.

Error Correction

Batch transactions found to be in error by the input, edit, update process, are not rejected from the system, but instead are placed on the Internal Transaction file. Accounting personnel may then recall the transactions in error and correct the specific field(s) in error.

Document Tracking And Payment Processing

These functions are integral components of the core input, edit, update process. Document tracking provides an approval and action tracking mechanism for selected types of documents, such as payment voucher. Payment processing generates warrants and direct deposits for approved payable transactions. These components are described in more detail in the other chapters.

Reporting

The system's financial reports are prepared by the Reporting and Distribution Subsystem. Virtually all of the reports are developed from financial tables and profiles.

The objective of the reporting function is to fulfill the information requirements of accounting and management personnel and of outside control agencies. To meet the diverse needs of these users, the reports must display financial data at various levels of classification detail. Many of the reports provide the ability to change the level of detail based on the user defined request.

In order to be useful, the reports produced by the accounting system must be concise, accurate, and timely. The requirement for concise information is to ensure that the only required information is presented to the user. The reports must be accurate to ensure that management decisions and other actions based on the reports are justified. The need for timely reports is obvious, for without the information on a timely basis, the data cannot be utilized effectively regardless of accuracy or conciseness.

All financial reports (which does not include system-generated control reports) are produced by user request. This allows system users to determine the frequency, timing, and time period of reports for their agency. Additionally, agencies can utilize the system security capabilities to limit who can request reports and the data that can be reported.

This overview has been included to provide users with background into some of the system design concepts and to introduce the accounting and data processing capabilities of RSTARS. Detailed user procedures and instructions are included in the remaining chapters of this manual.